

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Hironori KIKKAWA

Appln. No.: (Divisional of Application Serial
No. 09/207,207, filed December 8, 1998)

Confirmation No.: (not yet assigned)

Group Art Unit:

Filed:

Examiner:

For: ACTIVE MATRIX LIQUID CRYSTAL
DISPLAY DEVICE

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please add the following new claims:

9. A method of fabricating an LCD device having a common electrode, a plurality of scanning lines, a gate insulating film, a plurality of signal lines, a plurality of pixel electrodes and a plurality of pixel areas formed on a first substrate, comprising:

patterning a black matrix on one of the first substrate and a second substrate; and

disposing liquid crystal between said first substrate and said second substrate, wherein said black matrix covers an area other than said pixel area and said common electrode electrically shields said pixel area from a voltage of said black matrix.

PRELIMINARY AMENDMENT
Divisional of U.S. Appln. No. 09/207,207

10. The method of claim 9, further comprising forming a film between said second substrate and said black matrix.

11. The method of claim 10, wherein said step of forming a film comprises forming a chrome film between said second substrate and said black matrix.

12. The method of claim 9, further comprising:
forming a color filter on said second substrate; and
forming an overcoat layer on said color filter.

13. The method of claim 12, wherein said forming a color filter comprises using a plurality of photolithographic steps for a polyimide based layer.

14. The method of claim 13, wherein said photolithographic steps comprise dispersing RGB pigments in a photosensitive polymer.

15. The method of claim 12, wherein said overcoat layer substantially eliminates impurity ion migration into said liquid crystal, flattens a surface of said second substrate and controls a thickness of said liquid crystal.

16. The method of claim 9, further comprising positioning a plurality of polarizing plates between said first substrate and said second substrate.

17. The method of claim 9, further comprising forming said common electrode and said plurality of scanning lines of chrome.

18. The method of claim 9, wherein forming said gate insulating film comprises silicon oxide, an amorphous silicon layer and a N⁺ type amorphous silicon layer formed on said scanning lines and pixel electrodes.

PRELIMINARY AMENDMENT
Divisional of U.S. Appln. No. 09/207,207

19. The method of claim 9, further comprising configuring horizontal and vertical stripes of said plurality of pixel electrodes and vertical stripes of said common electrode to generate an electrical field having a main component extending parallel to said first substrate and said second substrate and perpendicular to said pixel electrodes and said common electrode in said pixel areas.

20. The method of claim 19, wherein said pixel electrode stripes are formed parallel to said common electrode vertical stripes.

21. The method of claim 9, further comprising forming orientation layers between a surface of each of said first and second substrates and said liquid crystal, said forming process comprising a rubbing process.

22. The method of claim 21, said disposing step comprising:

scattering polymer beads having a diameter substantially equal to a gap between said first substrate and said second substrate; and

bonding said first substrate to said second substrate, wherein said liquid crystal is disposed between said first substrate and said second substrate.

23. The method of claim 9, further comprising positioning first and second polarization plates at respective first and second substrates, wherein a polarization axis of said first polarization plate is aligned in an orientation of the liquid crystal and a polarization axis of said second polarization plate is aligned normal to said orientation of said liquid crystal.

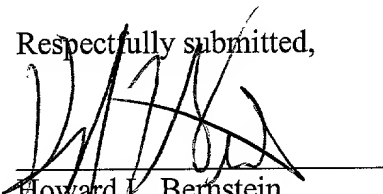
PRELIMINARY AMENDMENT
Divisional of U.S. Appln. No. 09/207,207

REMARKS

Entry and consideration of this Amendment is respectfully requested.

Added claims 9-23 correspond to claims added on October 27, 2000 in parent application
Serial No. 09/207,207 but non-elected following a Restriction Requirement in the parent
application dated February 2, 2001.

Respectfully submitted,


Howard L. Bernstein
Registration No. 25,665

SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Date: April 11, 2001